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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,902	09/15/2003	Dirk Achten	PO7781/LeA 35,909	1281
34947	7590	04/13/2006	EXAMINER	
LANXESS CORPORATION 111 RIDC PARK WEST DRIVE PITTSBURGH, PA 15275-1112			ANDERSON, REBECCA L	
			ART UNIT	PAPER NUMBER

1626

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/662,902	<b>Applicant(s)</b> ACHTEN ET AL.	
	<b>Examiner</b> Rebecca L. Anderson	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 2-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

Claims 1-7 are currently pending in the instant application. Claims 2-7 are withdrawn from consideration. Claim 1 is objected and rejected.

***Election/Restrictions***

Applicant's election with traverse of Group I, claim 1, and the further election of the compound, 3-chloro-2-butenyl 1H-pyrrole-1-carbodithioate, in the reply filed on 25 January 2006 is acknowledged. The traversal is on the ground(s) that an application may properly be required to be restricted to one of two or more claimed inventions only if they are able to support separate patents and are independent and distinct inventions. Applicant further argues that the examiner must examine the application on its merits, even though it includes claims to independent and distinct inventions if the search and examination of the entire application can be made without serious burden. This is not found persuasive because the inventions are independent and distinct as previously shown in the restriction requirement wherein: inventions I and II are shown to be distinct as the process as claimed can be used to make other and materially different products, such as wherein Z is a pyrrole or an imidazole; inventions III and IIV are shown to be distinct as the process as claimed can be used to make other and materially different products as can be seen wherein Z is a pyrrole or an imidazole; inventions I and IV are shown to be distinct as they are products which differ materially in structure and composition as one is a monomer and the other is a polymer; and inventions II and III are shown to be distinct as they are processes which differ materially as one process prepares a monomer and the other process prepares a polymer. In regards to the

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burdensome search argument, the inventions are independent and distinct because there is no patentable co-action between the groups and a reference anticipating one member will not render another obvious. Each group is directed to art recognized divergent subject matter which require different searching strategies for each group. Moreover, the examiner must perform a commercial database search on the subject matter of each group in addition to a paper search, which is quite burdensome to the examiner.

Therefore, as stated on pages 3 and 4 of the restriction requirement, **the elected invention for search and examination is:** the products of the formula as depicted in claim 1 wherein:

**R** is as found in claim 1; and

**Z** is a substituted or unsubstituted pyrrole.

The remaining subject matter of claim 1 that is not drawn to the above elected invention and the subject matter of claims 2-7 stands withdrawn under 37 CFR 1.142(b) as being for non-elected subject matter. The remaining compounds which are not within the elected invention, which are independent and distinct from the elected invention and do not have unity with the elected compound and are therefore withdrawn by means of a restriction requirement within the claims are, for example, the compounds of the formula (1) wherein Z is a radical of the formula (II), a substituted or unsubstituted pyrazole, imidazole, indole, carbazole, piperidinone, etc.

The above mentioned withdrawn compounds, which are withdrawn from consideration as being for nonelected subject matter, differ materially in structure and

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composition from the compounds of the elected invention. The withdrawn compounds differ from those of the elected invention, such as by pyrazole, imidazole, indole, carbazole, piperidine, etc. which are chemically recognized to differ in structure and function. This recognized chemical diversity of the compounds can be seen by the various classification of these compounds in the U.S. classification system, i.e. class 548 subclass 373.1(+) pyrazole; class 546 subclass 184(+) piperidine; class 548 subclass 335.1 (+) imidazole; class 548 subclass 440 (+) carbazole, etc. Therefore, again, the compounds which are withdrawn from consideration as being for non-elected subject matter differ materially in structure and composition and have been restricted properly as a reference which anticipated but the elected subject matter would not even render obvious the non-elected subject matter.

These withdrawn compounds are independent and distinct from the elected invention and do not have unity with the compound elected and are therefor withdrawn by means of a restriction requirement within the claims.

The requirement is still deemed proper.

### ***Claim Objections***

Claim 1 is objected to as containing non-elected subject matter. Claim 1 presented solely to the elected invention identified supra as: the elected invention for search and examination, would overcome this objection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. First, while claim 1 is directed to a compound of the "formula (1)" the structure provided is of formula (I). Therefore, it is unclear what compound is being claimed by claim 1, formula (1) or formula (I). Secondly, claim 1 includes pKa value provisos such as: "and which, in the parent form in which there is a hydrogen atom bonded to the nitrogen atom which has linkage to the  $-CS_2R$  group of formula (I), has a pKa value in the range from 12 to 20"; and "where the pKa value of the protonated form of formula (III) is in the range from 12 to 20." The pKa proviso's found in the claim do not appear to apply to the formula depicted as formula (I) as the first is to the parent form and the second proviso is to the compound of the formula (III). The parent form discussed in the first proviso and formula (III) in the second proviso appear to be starting materials for the preparation of the formula (I), therefore, the limitations of the pKa values in the definition of Z in the formula (I) do not appear to be further limitations of the formula (I), but further limitations of compounds other than the claimed compounds which renders the claims indefinite. It is unclear how these pKa limitations provided for Z of formula (I) define Z of formula (I) or how these limitations limit Z of formula (I) as the pKa limitations appear to apply to, different compounds, i.e. formula (III). The claim 1 is directed to a compound of the formula (1) or (I), however, the definition of Z in the compound of the formula (I) includes limitations that are not applicable to the compound of the formula (I), but to different compounds, such as formula (III), which are not claimed compounds. Therefore, claim 1 is considered

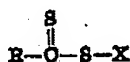
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indefinite as the pKa provisos found in the definition of Z of formula (I) do not appear to apply to the compound of the formula (I). It is suggested that these pKa provisos be deleted from the claim.

### ***Closest Prior Art***

The closest prior art is US Patent No. 3,078,153. US Patent No.

3,078,153 discloses the compounds of the formula R-C(=S)-S-X, column 1:



R in the above formula represents a hydrocarbon mono-nitrogen heterocyclic radical. Examples of R are the radicals derived by removal of the hydrogen from the nitrogen of ethylenimine, tetrahydropyridine, pyrrolidine, 2-methylpyrrolidine, 2,3-dimethylpyrrolidine, 2,5-dimethylpyrrolidine, piperidine, 2-methylpiperidine, 4-methylpiperidine, 5-ethyl-2-methylpiperidine, 5-ethyl-3-methylpiperidine, 2,3-dimethylpiperidine, 2,4-dimethylpiperidine, 2,4,6-trimethylpiperidine and hexamethylenimine. X may be lower alkyl, lower monoolefinic hydrocarbon or halogen substituted lower monoolefinic hydrocarbon. Examples are methyl, ethyl, butyl, propyl, isopropyl, allyl, 2-chloroallyl, 2-bromoallyl, 2-fluoroallyl, 2-iodoallyl, 3-chloroallyl, 3-bromoallyl, 3-fluoroallyl, 3-iodoallyl, 3-chloro-2-butenyl, 3-bromo-2-butenyl, 3-fluoro-2-butenyl, 3-iodo-2-butenyl, 2,3-dichloroallyl, 3,3-dichloroallyl, 2,3-dichloro-2-butenyl, 2,3-diiodo-2-butenyl, 2-fluoro-3-chloroallyl, 2,3-dibromoallyl, 3,4,5-trifluoro-3-butenyl and 2,3,3-trichloroallyl.

which are phytotoxic esters useful for the destruction of or controlling of undesired vegetation, column 1. A specific compound disclosed in US Patent No.

3,078,153 is the compound of **2-chloroallyl 1-pyrrolidinecarbodithioate.** which is disclosed in Table III.

However, the prior art of US Patent No. 3,078,153, while disclosing that R can be a hydrocarbon mono-nitrogen heterocyclic radical, fails to provide any direction or motivation to prepare the compounds as instantly claimed in the elected invention wherein Z is a substituted or unsubstituted pyrrole.

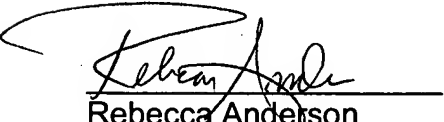
### Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rebecca L. Anderson whose telephone number is (571) 272-0696. Mrs. Anderson can normally be reached Monday through Friday 5:30AM to 2:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Joseph K. McKane, can be reached at (571) 272-0699.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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April 7, 2006